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                substances identified in English-, French-, German-,
                and Japanese-language basic patents from 2004-present
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NEWS 4 NOV 26 CHEMSAFE now available on STN Easy
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NEWS 7 DEC 12 GBFULL now offers single source for full-text
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NEWS 8 DEC 17 Fifty-one pharmaceutical ingredients added to PS
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NEWS 10 JAN 07 WPIDS, WPINDEX, and WPIX enhanced Japanese Patent
                Classification Data
NEWS 11 FEB 02 Simultaneous left and right truncation (SLART) added
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NEWS 12 FEB 02 GENBANK enhanced with SET PLURALS and SET SPELLING
NEWS 13 FEB 06 Patent sequence location (PSL) data added to USGENE
NEWS 14 FEB 10 COMPENDEX reloaded and enhanced
NEWS 15 FEB 11 WTEXTILES reloaded and enhanced
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=> file caplus
COST IN U.S. DOLLARS SINCE FILE TOTAL
FULL ESTIMATED COST 0.22 0.22
```

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FILE COVERS 1907 - 18 Feb 2009 VOL 150 ISS 8
FILE LAST UPDATED: 17 Feb 2009 (20090217/ED)
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This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> a carbonitrosilicate or nitrocarbosilicate
            0 CARBONITROSILICATE
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0 NITROCARBOSILICATE O CARBONITROSILICATE OR NITROCARBOSILICATE

SINCE FILE

4.98

TOTAL ENTRY SESSION

5 20

=> file reg

COST IN U.S. DOLLARS

FILL ESTIMATED COST

FILE 'REGISTRY' ENTERED AT 09:29:41 ON 18 FEB 2009

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E1
                CN6SI4TB0.3Y1.7/MF
E2
                 CN6SI4TB2/MF
E3
           0 --> CN6SI4Y2/MF
           6 CN7/MF
E4
E5
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                CN7Y8/MF
E6
                CN8O2/MF
E7
                CN804/MF
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2 CN9.CL6SB/MF
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1 CN6SI4TB0.3Y1.7/MF
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=> ;:
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RN 903905-90-8 REGISTRY
ED Entered STN: 23 Aug 2006
CN Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) (9CI) (CA INDEX
    NAME)
MF
    C . N . Si . Tb . Y
AF
   C N6 Si4 Tb0.3 Y1.7
CI
SR CA
LC STN Files: CA, CAPLUS
 Component | Ratio | Component | Registry Number
           1
                    6
                            l
I
                                     17778-88-0
N
Y
                   1.7
                                      7440-65-5
           - 1
                    1
                              - 1
                                      7440-44-0
Th
                   0.3
                                       7440-27-9
           - 1
                              - 1
Si
            1
                    4
                              - 1
                                      7440-21-3
             1 REFERENCES IN FILE CA (1907 TO DATE)
             1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
=> 4 411
   ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
   903905-90-8 REGISTRY
RN
ED Entered STN: 23 Aug 2006
CN Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) (9CI) (CA INDEX
    NAME)
MF C.N.Si.Tb.Y
AF C N6 Si4 Tb0.3 Y1.7
CI
   TIS
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
 Component | Ratio | Component | Registry Number
_____+___+___
        | 6 | 17778-88-0
| 1.7 | 7440-65-5
M
Y
           1
                              - 1
                                      7440-44-0
Tb
                   0.3
           - 1
                              - 1
                                      7440-27-9
Si
            1
                    4
                              - 1
                                       7440-21-3
             1 REFERENCES IN FILE CA (1907 TO DATE)
             1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
REFERENCE 1
AN
   145:220100 CA
TΙ
    Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and
    Y2Si4N6C:Tb3+
AU
    Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi
CS
    Center for Advanced Science and Innovation, Osaka University, Suita,
    Osaka, 565-0871, Japan
SO
    Journal of the Electrochemical Society (2006), 153(7), H151-H154
    CODEN: JESOAN; ISSN: 0013-4651
```

Journal T.A English 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Electrochemical Society

AB Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce,Tb), were prepd. by a carbothermal redn. and nitridation method. The crystal

PB

DT

coordinates of Ho2Si4N6C as a starting model. The host lattice was isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b

Section cross-reference(s): 78

- 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The
- photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+, were characterized from the detailed structural anal.
- result. ST prepn structure luminescence vttrium carbide nitride silicide cerium
- terbium
- Reduction
- (carbothermic, in prepn.; prepn., structure, and luminescence
- properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- IT Nitriding
- (in prepn.; prepn., structure, and luminescence properties of
- Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- Rare earth metals, properties ΙT RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
- (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- IT Bond angle Bond length
  - Crystal structure Luminescence
  - Molecular structure (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and
  - Y2Si4N6C:Tb3+)
- ΙT Photoexcitation
  - (spectra; prepn., structure, and luminescence properties of
  - Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - 343332-13-8P, Silicon yttrium carbide nitride (Si4Y2CN6)
  - RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
  - (doped with rare earth ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- ΙT 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6)

structure of Y2Si4N6C was detd. by Rietveld refinement using the at.

- 903905-90-8P, Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6)
- 903905-92-0P, Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6) 903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6)
- RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C: Tb3+)
- IΤ 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions
- RL: RCT (Reactant); RACT (Reactant or reagent) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- TΨ 7440-27-9, Terbium, properties 7440-45-1, Cerium, properties 18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
- (yttrium carbide nitride silicide doped with; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
- (1) Adamsky, R; Z Kristallogr 1959, V111, P350 CAPLUS
- (2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS
- (3) Hintzen, H; EP 1104799 2001 CAPLUS (4) Hirosaki, N; WO 2005078811 2001 CAPLUS
- (5) Hoppe, H; J Mater Chem 2001, V11, P3300
- (6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS

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(7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS
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(8) Li, Y; J Solid State Chem 2004, V177, P4687 CAPLUS (9) Liddell, K; J Eur Ceram Soc 2005, V25, P37 CAPLUS

(10) Schmidt, P; WO 2005083037 A1 2005 CAPLUS (11) Thompson, D; Mater Sci Res 1986, V20, P79 CAPLUS

(12) van Krevel, J; J Alloys Compd 1998, V268, P272 CAPLUS (13) van Krevel, J; J Solid State Chem 2002, V165, P19 CAPLUS

(14) Wiles, D; J Appl Crystallogr 1981, V14, P149 CAPLUS

(15) Wiles, D; J Appl Crystallogr 1982, V15, P430

# => d acc 343332-13-8

ANSWER 1 REGISTRY COPYRIGHT 2009 ACS on STN 343332-13-8 REGISTRY

ED Entered STN: 26 Jun 2001

CN Silicon yttrium carbide nitride (Si4Y2CN6) (CA INDEX NAME)

MF C . N . Si . Y

AF N6 O Si4 Y2

CI TIS

SR CA

LC STN Files: CA, CAPLUS, USPATFULL

Component	1	Ratio	1	Component Registry Number
	==+==		=+=	
N	- 1	6	-1	17778-88-0
Y	- 1	2	- 1	7440-65-5
C	- 1	1	- 1	7440-44-0
Si	- 1	4	- 1	7440-21-3

<sup>\*\*</sup>PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

- 5 REFERENCES IN FILE CA (1907 TO DATE)
- 5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> 0 811

- ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
- 903905-90-8 REGISTRY RN
- ED Entered STN: 23 Aug 2006
- CN Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) (9CI) (CA INDEX
- MF C . N . Si . Tb . Y
- AF C N6 Si4 Tb0.3 Y1.7
- CI TIS
- SR CA
- LC STN Files: CA, CAPLUS
- DT.CA CAplus document type: Journal

RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)

Component	- 1	Ratio	L	Component			
	- 1		L	Registry Number			
	=+=		+=				
N	1	6	ı	17778-88-0			
Y	1	1.7	ı	7440-65-5			
C	- 1	1	ı	7440-44-0			
Tb	- 1	0.3	ı	7440-27-9			
Si	- 1	4	L	7440-21-3			

1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

## REFERENCE 1

- AN 145:220100 CA
  - Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+
- ΔII Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi
- Center for Advanced Science and Innovation, Osaka University, Suita, CS Osaka, 565-0871, Japan
- Journal of the Electrochemical Society (2006), 153(7), H151-H154 SO CODEN: JESOAN; ISSN: 0013-4651
- PB Electrochemical Society
- DT Journal
- LA English
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- Section cross-reference(s): 78
  - Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce,Tb), were prepd. by a carbothermal redn. and nitridation method. The crystal structure of Y2Si4N6C was detd. by Rietveld refinement using the at. coordinates of Ho2Si4N6C as a starting model. The host lattice was isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+, were characterized from the detailed structural anal. result.
- ST prepn structure luminescence yttrium carbide nitride silicide cerium terbium
- Reduction
  - (carbothermic, in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- Nitridina (in prepn.; prepn., structure, and luminescence properties of
  - Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - Rare earth metals, properties RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- TΤ Bond angle
  - Bond length Crystal structure
  - Luminescence
    - Molecular structure (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and

Y2Si4N6C:Tb3+)

- Y2Si4N6C:Tb3+) Photoexcitation
- (spectra; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- 343332-13-8P, Silicon yttrium carbide nitride (Si4Y2CN6)
- RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (doped with rare earth ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6) 903905-90-8P, Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 903905-92-0P, Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6)
- 903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- TΨ 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions RL: RCT (Reactant): RACT (Reactant or reagent) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and
- 7440-27-9, Terbium, properties 7440-45-1, Cerium, properties http://stnweb.cas.org/cgi-bin/sdcgi?SID=166105-2035495676-200&APP=stnweb&

2/18/09

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18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties
    RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
        (yttrium carbide nitride silicide doped with; prepn., structure, and
        luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
RE.CNT 15
            THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
(1) Adamsky, R; Z Kristallogr 1959, V111, P350 CAPLUS
(2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS
(3) Hintzen, H; EP 1104799 2001 CAPLUS
(4) Hirosaki, N; WO 2005078811 2001 CAPLUS
(5) Hoppe, H; J Mater Chem 2001, V11, P3300
(6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS
(7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS
(8) Li, Y; J Solid State Chem 2004, V177, P4687 CAPLUS
(9) Liddell, K; J Eur Ceram Soc 2005, V25, P37 CAPLUS
(10) Schmidt, P; WO 2005083037 Al 2005 CAPLUS
(11) Thompson, D; Mater Sci Res 1986, V20, P79 CAPLUS
(12) van Krevel, J; J Alloys Compd 1998, V268, P272 CAPLUS
(13) van Krevel, J; J Solid State Chem 2002, V165, P19 CAPLUS
(14) Wiles, D; J Appl Crystallogr 1981, V14, P149 CAPLUS
(15) Wiles, D; J Appl Crystallogr 1982, V15, P430
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E2
                  CCEN/MF
E3
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E4
                 CCEO/MF
E5
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                 CCEO2/MF
                 CCEO3/MF
E6
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1 CCEO4/MF
1 CCEO4.H4N/MF
E7
E8
E9
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E11
                 CCEPT3/MF
E12
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E2
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E3
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E6
E7
                  CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.08SI4Y1.92CN6)/C
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                  CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.2SI4Y1.8CN6)/CN
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CERIUM SILICON YTTRIUM NITRIDE (CEO.05SI3Y0.95N5)/CN

1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.02S14Y1.98CN6)"/CN 1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CEO.04S14Y1.96CN6)"/CN 1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.06S14Y1.94CN6)"/CN 1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.08SI4Y1.92CN6)"/CN 1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.1S14Y1.9CN6)"/CN 1 "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CEO.2SI4Y1.8CN6)"/CN

CERIUM SILICON ZIRCONIUM BORIDE NITRIDE OXIDE (CEO.03SIO.1ZR

1 "CERIUM SILICON YTTRIUM NITRIDE (CEO.05SI3Y0.95N5)"/CN L3 7 ("CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.02S14Y1.98CN6)"/CN OR "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.04S14Y1.96CN6)" /CN OR "CERIUM SILICON YTTRIUM CARBIDE NITRIDE (CE0.06S14Y1.94CN http://stnweb.cas.org/cgi-bin/sdcgi?SID=166105-2035495676-200&APP=stnweb&

CERIUM SILICON YTTRIUM OXIDE/CN

0.74B1.68N0.3400.06)/CN

E10

E11

E12

=> 3 64-810

2/18/09

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                  4)/CN
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E5
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                 CERIUM SILICON NITRIDE (CESI3N5)/CN
E7
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                 CERIUM SILICON NITRIDE OXIDE (CEO.1SI2.85N3.800.15)/CN
E11
                 CERIUM SILICON NITRIDE OXIDE (CE16SI15N32O6)/CN
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                 CERIUM SILICON NITRIDE OXIDE (CE2SI3N2O5)/CN
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                 CERIUM SILICON NITRIDE (CESI3N5)/CN
E6
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                 CERIUM SILICON NITRIDE OXIDE (CEO.02SI2.93N3.900.05)/CN
E9
                 CERIUM SILICON NITRIDE OXIDE (CEO.08SI2.75N3.6700.17)/CN
E10
                 CERIUM SILICON NITRIDE OXIDE (CEO.1SI2.85N3.800.15)/CN
E11
                 CERIUM SILICON NITRIDE OXIDE (CE16SI15N32O6)/CN
E12
                 CERIUM SILICON NITRIDE OXIDE (CE2SI3N2O5)/CN
=> d all 13
    ANSWER 1 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN
L3
    1007115-58-3 REGISTRY
RN
    Entered STN: 07 Mar 2008
ED
CN
    Cerium silicon yttrium nitride (Ce0.05Si3Y0.95N5) (CA INDEX
    NAME)
MF
    Ce . N . Si . Y
ΑF
    Ce0.05 N5 Si3 Y0.95
CI
    TIS
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)
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		-		
Component	1	Ratio	1	Component
	- 1		Re	gistry Number
	==+==		+	
N	- 1	5	1	17778-88-0
Y	- 1	0.95	1	7440-65-5
Ce	- 1	0.05	1	7440-45-1
Si	- 1	3	1	7440-21-3

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)



```
AN
   148:272455 CA
TI
    Method for preparing nitride phosphor
TN
   Liu, Quanlin; Wei, Xiaodan; Cai, Liyan
    University of Science and Technology of Beijing, Peop. Rep. China
PA
SO
   Faming Zhuanli Shenging Gongkai Shuomingshu, 11pp.
    CODEN: CNXXEV
DΤ
    Patent
LA
    Chinese
CC
    73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
    Properties)
FAN.CNT 1
    PATENT NO.
                 KIND DATE
                                        APPLICATION NO. DATE
                                         -----
PI CN 101113332 A 20080130 CN 2007-10119774 20070731
PRAI CN 2007-10119774 20070731
     The title nitride luminous material has a general chem. formula of:
    Ln1-xMxy+Si3N5-3x+xyO3x-xy, wherein, Ln is La or Y; M is Ce or Eu; y=3
    or 2; 0<x<1. The title method entails the steps of: (1) smelting Ln and
    Si in an arc furnace to obtain alloy LnaSib, smelting Ce and Si in an arc
     furnace to obtain alloy CecSid, and grinding, and (2) uniformly and
    proportionally mixing LnaSib, CecSid or Eu203, and Si3N4, tabletting,
    placing into a high-temp. solid-phase reaction furnace, and sintering at
     1,600-1,800°C under 1-10atm nitrogen protection for 1-10h. By
    doping rare earth luminous center My+ in YSi3(N,O)5 matrix, nitride
    luminous material with good fluorescent performance in visible light wave
    band can be obtained. The nitride luminous material has an emission
    wavelength of 400-600nm when being excited by 350-510nm light.
   prepn nitride luminous material
ST
IT Grinding (machining)
     Phosphors
    Sintering
    Smelting
        (method for prepg. nitride phosphor)
     1007115-58-3P, Cerium silicon yttrium nitride (Ce0.05Si3Y0.95N5)
     1007115-59-4P, Europium silicon yttrium nitride oxide
     (Eu0.1Si3Y0.9N4.900.1) 1007115-60-7P, Cerium lanthanum silicon nitride
     (Ce0.02La0.98Si3N5) 1007115-61-8P, Europium lanthanum silicon nitride
     oxide (Eu0.05La0.95Si3N4.9500.05)
    RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or
     engineered material use); PREP (Preparation); USES (Uses)
        (method for prepg. nitride phosphor)
TΨ
    1308-96-9, Europium oxide 7439-91-0, Lanthanum, reactions 7440-21-3,
    Silicon, reactions 7440-45-1, Cerium, reactions 7440-65-5, Yttrium, reactions 12033-89-5, Silicon nitride, reactions 102427-06-5, Yttrium
     silicide 144593-16-8, Lanthanum silicide 144593-17-9, Cerium silicide
    RL: RCT (Reactant); RACT (Reactant or reagent)
        (method for prepg, nitride phosphor)
=> d all 13 1-7
    ANSWER 1 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN
RN
   1007115-58-3 REGISTRY
ED Entered STN: 07 Mar 2008
CN Cerium silicon yttrium nitride (Ce0.05Si3Y0.95N5) (CA INDEX
    NAME)
MF Ce . N . Si . Y
AF
   Ce0.05 N5 Si3 Y0.95
CT
    TIS
SR CA
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)
                                 - 1
 Component
            | Ratio
                                       Component
                                 | Registry Number
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```
- 1
                    5
                                 - 1
                                         17778-88-0
M
Υ
            - 1
                     0.95
                               - 1
                                          7440-65-5
Ce
            - 1
                     0.05
                                 - 1
                                          7440-45-1
Si
             - 1
                      - 3
                                 - 1
                                          7440-21-3
              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
REFERENCE 1
   Full
  Text
AN
    148:272455 CA
TI
    Method for preparing nitride phosphor
IN
   Liu, Quanlin; Wei, Xiaodan; Cai, Liyan
PA
    University of Science and Technology of Beijing, Peop. Rep. China
SO
    Faming Zhuanli Shenging Gongkai Shuomingshu, 11pp.
    CODEN: CNXXEV
DT
    Patent
LA
   Chinese
CC
    73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
    Properties)
FAN.CNT 1
    PATENT NO.
                   KIND DATE
                                        APPLICATION NO. DATE
    CN 101113332 A 20080130
                                        CN 2007-10119774 20070731
PRAI CN 2007-10119774 20070731
    The title nitride luminous material has a general chem. formula of:
    Ln1-xMxy+Si3N5-3x+xyO3x-xy, wherein, Ln is La or Y; M is Ce or Eu; y=3
     or 2; 0<x<1. The title method entails the steps of: (1) smelting In and
     Si in an arc furnace to obtain alloy LnaSib, smelting Ce and Si in an arc
     furnace to obtain alloy CecSid, and grinding, and (2) uniformly and
    proportionally mixing LnaSib, CecSid or Eu2O3, and Si3N4, tabletting,
    placing into a high-temp, solid-phase reaction furnace, and sintering at
     1,600-1,800°C under 1-10atm nitrogen protection for 1-10h. By
    doping rare earth luminous center My+ in YSi3(N,O)5 matrix, nitride
     luminous material with good fluorescent performance in visible light wave
    band can be obtained. The nitride luminous material has an emission
    wavelength of 400-600nm when being excited by 350-510nm light.
ST
    prepn nitride luminous material
IT Grinding (machining)
    Phosphors
    Sintering
    Smelting
        (method for prepg. nitride phosphor)
     1007115-58-3P, Cerium silicon yttrium nitride (Ce0.05Si3Y0.95N5)
     1007115-59-4P, Europium silicon yttrium nitride oxide
     (Eu0.1Si3Y0.9N4.900.1) 1007115-60-7P, Cerium lanthanum silicon nitride
```

(EuO.1si3Y0.9N4.900.1) 1007115-60-7P, Cerium lanthanum silicon nitride (CeO.02La0.985i3N5) 1007115-61-8P, Europium lanthanum silicon nitride oxide (Eu0.05La0.955i3N4.9500.05)

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(method for prepg. nitride phosphor)

I 1308-96-9, Europium oxide 7439-91-0, Lanthanum, reactions 7440-21-3, Silicon, reactions 7440-45-1, Cerium, reactions 7440-65-5, Yttrium, reactions 12033-89-5, Silicon nitride, reactions 120247-06-5, Yttrium silicide 144593-16-B, Lanthanum silicide 144593-17-9, Cerium silicide RL: RCT (Reactant); RACT (Reactant or reagent)

(method for prepg. nitride phosphor)

- L3 ANSWER 2 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN
- RN 925545-77-3 REGISTRY
- ED Entered STN: 07 Mar 2007
- CN Cerium silicon yttrium carbide nitride (Ce0.2Si4Y1.8CN6) (CA INDEX NAME)

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MF C . Ce . N . Si . Y
AF C CeO.2 N6 Si4 Y1.8
   TIS
CI
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SR CA

LC STN Files: CA, CAPLUS, USPATFULL DT.CA CAplus document type: Patent

RL.P Roles from patents: USES (Uses)

Component	- 1	Ratio	I	Component
	- 1		I	Registry Number
	=+=	============	+	
N	- 1	6	1	17778-88-0
Y	- 1	1.8	1	7440-65-5
Ce	- 1	0.2	1	7440-45-1
C		1	1	7440-44-0
Si	- 1	4	- 1	7440-21-3
	1	DEFEDENCES	TN PITE	C3 (1007 MO D3ME)

1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

# REFERENCE 1

### AN 146:261546 CA

- Phosphors with carbidonitridosilicate-type host lattices
- IN Hintzen, Hubertus Theresia; Starick, Detlef; Roesler, Sylke; Roesler, Sven; Li, Yuan Oiang
- PA Leuchtstoffwerk Breitungen GmbH, Germany; Tridonic Optoelectronics GmbH so Ger. Offen., 8pp.
- CODEN: GWXXBX
- DT Patent
- LA German
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

FAN.	FAN.CNT 1																
	PATENT	NO.		KI	ND	DATE			A	PPLI	CATI	ON N	٥.	DATE			
PI	DE 1020	05043	1153	A	1	2007	0301		D	E 20	05-1	0200	5041	1532	0050	830	
	CA 2620	558		A.	1	2007	0308		CA 2006-2620558 20060829								
	WO 2007	02591	73	A.	A1 20070308			WO 2006-EP65788 200				20060829					
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		CN,	co,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,
		GE,	GH,	GM,	HN,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	KE,	KG,	KM,	KN,	KP,
		KR,	ΚZ,	LA,	LC,	LK,	LR,	LS,	LT,	LU,	LV,	LY,	MA,	MD,	MG,	MK,	MN,
		MW,	MX,	MY,	ΜZ,	NA,	NG,	NI,	NO,	NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RS,
		RU,	SC,	SD,	SE,	SG,	SK,	SL,	SM,	sv,	SY,	ТJ,	TM,	TN,	TR,	TΤ,	ΤZ,
		UA,	UG,	US,	UZ,	VC,	VN,	ZA,	ZM,	zw							
	RW:	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,
		IS,	ΙT,	LT,	LU,	LV,	MC,	NL,	PL,	PT,	RO,	SE,	SI,	SK,	TR,	BF,	ВJ,
		CF,	CG,	CI,	CM,	GΑ,	GN,	GQ,	G₩,	ML,	MR,	ΝE,	SN,	TD,	ΤG,	BW,	GH,
		GM,	KΕ,	LS,	ΜW,	MZ,	NA,	SD,	SL,	SZ,	ΤZ,	UG,	ZM,	ZW,	AM,	ΑZ,	BY,
		KG,	ΚZ,	MD,	RU,	ТJ,	TM										
	EP 1922	904		A.	1	2008	0521		E	P 20	06-7	9306	8	2006	0829		
	R:	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,
														SI,			
	JP 2009506185 IN 2008DN01848			T		2009	0212		J	P 20	08 - 5	2850	6	2006	0829		
				A		2008	0627		IN 2008-DN1848				8	20080229			
	CN 1012																
	US 2008																
	KR 2008	0497	71	A		2008	0604		K	R 20	08-7	0722	0	2008	0325		

- PRAI DE 2005-102005041153 20050830 WO 2006-EP65788 20060829
- AB Phosphors based on doped hosts are described which have a carbidonitridosilicate-type host lattice.
  - carbidonitridosilicate host lattice phosphor

```
IT Phosphors
```

(phosphors with carbidonitridosilicate-type host lattices)

34332-13-8, Silicon yttrium carbide nitride (Si4Y2CN6) 903905-91-9, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 925545-76-2, Cerium silicon yttrium carbide nitride (Ce0.1Si4Y1.9CN6) 925545-77-3, Cerium silicon yttrium carbide nitride (Ce0.2Si4Y1.8CN6)

RL: TEM (Technical or engineered material use); USES (Uses) (cerium and/or terbium-doped; phosphors with carbidonitridosilicate-type host lattices)

7440-27-9, Terbium, uses 7440-45-1, Cerium, uses 7440-53-1, Europium, uses 16910-54-6, Europium 2+, uses 18923-26-7, Cerium 3+, uses 22541-18-0, Europium 3+, uses 22541-20-4, Terbium 3+, uses RI:  $\mathrm{ROA}$  (Modifier or additive use); TEM (Technical or engineered material

use); USES (Uses)
 (phosphors with carbidonitridosilicate-type host lattices)

L3 ANSWER 3 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN

RN 925545-76-2 REGISTRY

ED Entered STN: 07 Mar 2007

CN Cerium silicon yttrium carbide nitride (Ce0.1Si4Y1.9CN6) (CA

INDEX NAME)
MF C . Ce . N . Si . Y

AF C Ce0.1 N6 Si4 Y1.9

CI TIS

SR CA LC STN Files: CA, CAPLUS, USPATFULL

DT.CA CAplus document type: Patent RL.P Roles from patents: USES (Uses)

Component	Ratio	Component   Registry Number
	+	
N	1 6	17778-88-0
Y	1.9	7440-65-5
Ce	0.1	7440-45-1
C	1	7440-44-0
Si	1 4	7440-21-3

1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

## REFERENCE 1 Full Text

- AN 146:261546 CA
- TI Phosphors with carbidonitridosilicate-type host lattices
- IN Hintzen, Hubertus Theresia; Starick, Detlef; Roesler, Sylke; Roesler, Sven; Li, Yuan Qiang
- PA Leuchtstoffwerk Breitungen GmbH, Germany; Tridonic Optoelectronics GmbH
- SO Ger. Offen., 8pp. CODEN: GWXXBX
- DT Patent LA German
  - C 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

## FAN CNT 1

PI DE 102005041153 A1 20070301 DE 2005-10200504115320050830 CA 2620558 A1 20070308 CA 2006-2620558 20060829 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, MM, DZ, EC, EE, EG, ES, FIT, GB, CA

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MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
            RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,
            UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
        RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
            IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
            CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
            GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
            KG, KZ, MD, RU, TJ, TM
    EP 1922904
                   A1 20080521
                                      EP 2006-793068
                                                      20060829
        R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
            IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR
    <u>JP 2009506185</u> T 20090212 <u>JP 2008-528506</u> 20060829
    PRAI DE 2005-102005041153 20050830
    WO 2006-EP65788 20060829
    Phosphors based on doped hosts are described which have a
    carbidonitridosilicate-type host lattice.
    carbidonitridosilicate host lattice phosphor
    Phosphors
       (phosphors with carbidonitridosilicate-type host lattices)
    343332-13-8, Silicon yttrium carbide nitride (Si4Y2CN6) 903905-91-9,
    Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 925545-76-2,
    Cerium silicon yttrium carbide nitride (Ce0.1Si4Y1.9CN6) 925545-77-3,
    Cerium silicon yttrium carbide nitride (Ce0.2Si4Y1.8CN6)
    RL: TEM (Technical or engineered material use); USES (Uses)
       (cerium- and/or terbium-doped; phosphors with
       carbidonitridosilicate-type host lattices)
    7440-27-9, Terbium, uses 7440-45-1, Cerium, uses 7440-53-1, Europium,
    uses 16910-54-6, Europium 2+, uses 18923-26-7, Cerium 3+, uses
     22541-18-0, Europium 3+, uses 22541-20-4, Terbium 3+, uses
    RL: MOA (Modifier or additive use); TEM (Technical or engineered material
    use); USES (Uses)
       (phosphors with carbidonitridosilicate-type host lattices)
    ANSWER 4 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN
   903905-93-1 REGISTRY
   Entered STN: 23 Aug 2006
   Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) (CA
    INDEX NAME)
    C . Ce . N . Si . Y
   C Ce0.08 N6 Si4 Y1.92
    TIS
SR CA
    STN Files: CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
 Component | Ratio
                               - 1
                                     Component
                              | Registry Number
           1
     _____
           1
                              1
                                     17778-88-0
           - 1
                    1.92
                                        7440-65-5
```

N Y 1 Ce - 1 0.08 7440-45-1 С 1 1 - 1 7440-44-0 Sí - 1 4

1 REFERENCES IN FILE CA (1907 TO DATE) 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)



AB

ST

ΙT

L3

RN

ED

MF

AF

CI

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi

AN

TΙ

AΠ

CS

SO

PB

DT

LA

145:220100 CA

Y2Si4N6C:Tb3+

Journal

English

Bond length

ΙT

IΤ

Osaka, 565-0871, Japan

Electrochemical Society

CODEN: JESOAN; ISSN: 0013-4651

Section cross-reference(s): 78

Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and

Center for Advanced Science and Innovation, Osaka University, Suita,

Journal of the Electrochemical Society (2006), 153(7), H151-H154

- AB Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce,Tb), were prepd. by a carbothermal redn. and nitridation method. The crystal
  - structure of Y2Si4N6C was detd. by Rietveld refinement using the at. coordinates of Ho2Si4N6C as a starting model. The host lattice was
  - isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and
  - Y2Si4N6C:Tb3+, were characterized from the detailed structural anal. result.
- prepn structure luminescence yttrium carbide nitride silicide cerium terbium ΙT Reduction
- (carbothermic, in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) IT
  - Nitriding (in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) Rare earth metals, properties
  - RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) Bond angle
  - Crystal structure Luminescence Molecular structure (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and
  - Y2Si4N6C:Tb3+) Photoexcitation
- ΙT (spectra; prepn., structure, and luminescence properties of
  - Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
    - 343332-13-8P, Silicon yttrium carbide nitride (Si4Y2CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
  - (doped with rare earth ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6) 903905-90-8P, Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6)
  - 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6)
  - 903905-92-0P, Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6) 903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
  - (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
    - 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions
    - RL: RCT (Reactant); RACT (Reactant or reagent) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) 18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties
- RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (yttrium carbide nitride silicide doped with; prepn., structure, and http://stnweb.cas.org/cgi-bin/sdcgi?SID=166105-2035495676-200&APP=stnweb&

7440-27-9, Terbium, properties 7440-45-1, Cerium, properties

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luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
(1) Adamsky, R; Z Kristallogr 1959, V111, P350 CAPLUS
(2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS
(3) Hintzen, H; EP 1104799 2001 CAPLUS
(4) Hirosaki, N; WO 2005078811 2001 CAPLUS
(5) Hoppe, H; J Mater Chem 2001, V11, P3300
(6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS
(7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS
(8) Li, Y; J Solid State Chem 2004, V177, P4687 CAPLUS
(9) Liddell, K; J Eur Ceram Soc 2005, V25, P37 CAPLUS
(10) Schmidt, P; WO 2005083037 A1 2005 CAPLUS
(11) Thompson, D; Mater Sci Res 1986, V20, P79 CAPLUS
(12) van Krevel, J; J Allovs Compd 1998, V268, P272 CAPLUS
(13) van Krevel, J; J Solid State Chem 2002, V165, P19 CAPLUS
(14) Wiles, D; J Appl Crystallogr 1981, V14, P149 CAPLUS
(15) Wiles, D; J Appl Crystallogr 1982, V15, P430
    ANSWER 5 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN
L3
RN
   903905-92-0 REGISTRY
ED Entered STN: 23 Aug 2006
CN Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6) (CA
    INDEX NAME)
MF
    C . Ce . N . Si . Y
AF
    C Ce0.04 N6 Si4 Y1.96
CI
    TIS
SR
   CA
LC STN Files:
                CA, CAPLUS
DT.CA CAplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
 Component I
                     Ratio
                                        Component
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Componenc		Nacio		COM	Ponenc
	1		1	Regist	ry Number
	+			+	
N	1	6		1	7778-88-0
Y	1	1.96	1	l .	7440-65-5
Ce	1	0.04	1	l .	7440-45-1
С	1	1	1	1	7440-44-0
Si	1	4		l .	7440-21-3
	1 R	EFERENCES	IN FILE	CA (1907	TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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REFERENCE 1
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AN
    145:220100 CA
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- Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and Y2S14N6C:Tb3+
- AU Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi
- CS Center for Advanced Science and Innovation, Osaka University, Suita,
- Osaka, 565-0871, Japan
- SO Journal of the Electrochemical Society (2006), 153(7), H151-H154 CODEN: JESOAN; ISSN: 0013-4651
- PB Electrochemical Society
- DT Journal
- LA English
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- Section cross-reference(s): 78 AB Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce,Tb), were
- prepd. by a carbothermal redn. and nitridation method. The crystal structure of Y2Si4N6C was detd. by Rietveld refinement using the at. coordinates of Ho2Si4N6C as a starting model. The host lattice was isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b

- 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+, were characterized from the detailed structural anal.
- result. ST prepn structure luminescence yttrium carbide nitride silicide cerium terbium
- TΤ Reduction

(carbothermic, in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) Nitriding

(in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)

ΙT Rare earth metals, properties

RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)

Bond angle

ΙT

ΙT

Bond length Crystal structure

Luminescence Molecular structure

(prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)

Photoexcitation (spectra; prepn., structure, and luminescence properties of

Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) 343332-13-8P, Silicon yttrium carbide nitride (Si4Y2CN6)

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (doped with rare earth ions; prepn., structure, and luminescence

properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6) 903905-90-8P, Silicon terbium vttrium carbide nitride (Si4Tb0.3Y1.7CN6) 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 903905-92-0P, Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6)

903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C: Tb3+)

IΤ 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and

Y2Si4N6C: Tb3+) 7440-27-9, Terbium, properties 7440-45-1, Cerium, properties

18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (vttrium carbide nitride silicide doped with; prepn., structure, and

luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+) THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE.CNT 15 (1) Adamsky, R; Z Kristallogr 1959, V111, P350 CAPLUS

(2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS

(3) Hintzen, H; EP 1104799 2001 CAPLUS

(4) Hirosaki, N; WO 2005078811 2001 CAPLUS

(5) Hoppe, H; J Mater Chem 2001, V11, P3300

(6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS

(7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS

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(9) Liddell, K; J Eur Ceram Soc 2005, V25, P37 CAPLUS

(10) Schmidt, P; WO 2005083037 A1 2005 CAPLUS

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(15) Wiles, D; J Appl Crystallogr 1982, V15, P430

ANSWER 6 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN

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RN
   903905-91-9 REGISTRY
ED Entered STN: 23 Aug 2006
    Cerium silicon vttrium carbide nitride (Ce0.02Si4Y1.98CN6) (CA
     INDEX NAME)
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AF C Ce0.02 N6 Si4 Y1.98
CI
    TIS
SR CA
LC
    STN Files: CA, CAPLUS, USPATFULL
DT.CA Caplus document type: Journal; Patent
RL.P Roles from patents: USES (Uses)
RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)
                   Ratio
  Component |
                                        Component
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Ce
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                                            7440-44-0
Si
                                            7440-21-3
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                                   - 1
               2 REFERENCES IN FILE CA (1907 TO DATE)
               2 REFERENCES IN FILE CAPLUS (1907 TO DATE)
REFERENCE 1
     146:261546 CA
ΤI
     Phosphors with carbidonitridosilicate-type host lattices
     Hintzen, Hubertus Theresia; Starick, Detlef; Roesler, Sylke; Roesler,
     Sven; Li, Yuan Qiang
PΑ
     Leuchtstoffwerk Breitungen GmbH, Germany; Tridonic Optoelectronics GmbH
SO
     Ger. Offen., 8pp.
     CODEN: GWXXBX
DТ
     Patent
LA
     73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
     Properties)
FAN.CNT 1
     PATENT NO. KIND DATE
                                          APPLICATION NO. DATE
       _____
     DE 102005041153 A1 20070301
PΙ
                                          DE 2005-10200504115320050830

        CA
        2620558
        A1
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        CA
        2006-2620558
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        WO
        2007025973
        A1
        20070308
        WO
        2006-EP65788
        20060829

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             KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN,
             MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
             RU. SC. SD. SE. SG. SK. SL. SM. SV. SY. TJ. TM. TN. TR. TT. TZ.
             UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
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             KG, KZ, MD, RU, TJ, TM
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JP 2009506185 T 20090212 JP 2008-528506 20060829

EP 1922904 A1 20080521

Th 2008DN01848 A 20080627 CN 101253814 A 20080827 US 20080251764 A1 20081016 KR 2008049771 A 20080604

EP 2006-793068 20060829

IN 2008-DN1848 20080229
CN 2006-80031921 20080229
US 2008-65480 20080229
KR 2008-707220 20080325

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PRAI DE 2005-102005041153 20050830
    WO 2006-EP65788 20060829
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- Phosphors based on doped hosts are described which have a carbidonitridosilicate-type host lattice.
- ST carbidonitridosilicate host lattice phosphor
- TΨ Phosphors

(phosphors with carbidonitridosilicate-type host lattices) IT

343332-13-8, Silicon yttrium carbide nitride (Si4Y2CN6) 903905-91-9, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 925545-76-2, Cerium silicon yttrium carbide nitride (Ce0.1Si4Y1.9CN6) 925545-77-3, Cerium silicon yttrium carbide nitride (Ce0.2Si4Y1.8CN6)

RL: TEM (Technical or engineered material use); USES (Uses) (cerium- and/or terbium-doped; phosphors with

carbidonitridosilicate-type host lattices) 7440-27-9, Terbium, uses 7440-45-1, Cerium, uses 7440-53-1, Europium, 16910-54-6, Europium 2+, uses 18923-26-7, Cerium 3+, uses 22541-18-0, Europium 3+, uses 22541-20-4, Terbium 3+, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(phosphors with carbidonitridosilicate-type host lattices)

# REFERENCE 2

ΙT

- MΔ 145:220100 CA
- Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and
- ΑU Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi
- CS Center for Advanced Science and Innovation, Osaka University, Suita, Osaka, 565-0871, Japan
- Journal of the Electrochemical Society (2006), 153(7), H151-H154 CODEN: JESOAN; ISSN: 0013-4651
- PB Electrochemical Society
- DT Journal
- LA English
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
  - Section cross-reference(s): 78
- Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce,Tb), were AB prepd. by a carbothermal redn. and nitridation method. The crystal structure of Y2Si4N6C was detd. by Rietveld refinement using the at. coordinates of Ho2Si4N6C as a starting model. The host lattice was isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+, were characterized from the detailed structural anal.
  - result. prepn structure luminescence yttrium carbide nitride silicide cerium terbium
- ΙT Reduction

TΨ

- (carbothermic, in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- Nitriding
  - (in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- TΤ Rare earth metals, properties
  - RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+
- and Y2Si4N6C:Tb3+)
  - Bond angle Bond length
  - Crystal structure
  - Luminescence
  - Molecular structure
- http://stnweb.cas.org/cgi-bin/sdcgi?SID=166105-2035495676-200&APP=stnweb&

(prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and

## Y2Si4N6C:Tb3+)

- IT Photoexcitation
  - (spectra; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - 343332-13-8P, Silicon yttrium carbide nitride (Si4Y2CN6)
  - RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (doped with rare earth ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- ΙT 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6)
- 903905-90-8P, Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6)
- 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6)
- 903905-92-0P, Cerium silicon yttrium carbide nitride (Ce0.04Si4Y1.96CN6)
  - 903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
  - (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions
  - 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions RL: RCT (Reactant); RACT (Reactant or reagent)
  - (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- ΙT 7440-27-9, Terbium, properties 7440-45-1, Cerium, properties 18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties
  - RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
  - (yttrium carbide nitride silicide doped with; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
- (1) Adamsky, R; Z Kristallogr 1959, V111, P350 CAPLUS
- (2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS
- (3) Hintzen, H; EP 1104799 2001 CAPLUS
- (4) Hirosaki, N; WO 2005078811 2001 CAPLUS
- (5) Hoppe, H; J Mater Chem 2001, V11, P3300
- (6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS
- (7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS
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- (10) Schmidt, P; WO 2005083037 A1 2005 CAPLUS
- (11) Thompson, D; Mater Sci Res 1986, V20, P79 CAPLUS
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- (14) Wiles, D; J Appl Crystallogr 1981, V14, P149 CAPLUS
- (15) Wiles, D; J Appl Crystallogr 1982, V15, P430
- ANSWER 7 OF 7 REGISTRY COPYRIGHT 2009 ACS on STN L3
- RN 903905-89-5 REGISTRY
- ED Entered STN: 23 Aug 2006
- CN Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6) (CA INDEX NAME)
- MF C . Ce . N . Si . Y AF C Ce0.06 N6 Si4 Y1.94
- CI TIS
- SR CA
- LC STN Files: CA, CAPLUS
- DT.CA CAplus document type: Journal
- RL.NP Roles from non-patents: PREP (Preparation); PRP (Properties)

Component	1	Ratio	1	Component Registry Number
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N	- 1	6	- 1	17778-88-0
Y	- 1	1.94	- 1	7440-65-5
Ce	- 1	0.06	- 1	7440-45-1
C	- 1	1	- 1	7440-44-0
Si	- 1	4	- 1	7440-21-3

1 REFERENCES IN FILE CA (1907 TO DATE) http://stnweb.cas.org/cgi-bin/sdcgi?SID=166105-2035495676-200&APP=stnweb&

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REFERENCE 1
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- $\Delta M$ 145:220100 CA
  - Preparation, Structure, and Luminescence Properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+
- 7.11 Zhang, Hongchuan; Horikawa, Takashi; Machida, Ken-Ichi
- CS Center for Advanced Science and Innovation, Osaka University, Suita, Osaka, 565-0871, Japan
- SO Journal of the Electrochemical Society (2006), 153(7), H151-H154 CODEN: JESOAN; ISSN: 0013-4651
- PB Electrochemical Society
- DT Journal
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- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
  - Section cross-reference(s): 78
  - Rare-earth Si carbonitrides, Y2Si4N6C and Y2Si4N6C:M3+ (M=Ce.Tb), were prepd. by a carbothermal redn. and nitridation method. The crystal structure of Y2Si4N6C was detd. by Rietveld refinement using the at. coordinates of Ho2Si4N6C as a starting model. The host lattice was isostructural with Ho2Si4N6C of monoclinic system [P21/c, a 5.9295(1), b 9.8957(1), c 11.8800(2) A,  $\beta$  119.63(4)°, and Z = 4]. The photoluminescence properties of doped materials, Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+, were characterized from the detailed structural anal. result.
- ST prepn structure luminescence yttrium carbide nitride silicide cerium terbium
- Reduction
  - (carbothermic, in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - Nitriding
    - (in prepn.; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- ΙT Rare earth metals, properties
  - RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
    - (ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- IΤ Bond angle Bond length
- Crystal structure
  - Luminescence
    - Molecular structure (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and
    - Y2Si4N6C:Tb3+) Photoexcitation
- (spectra; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- ΙT 343332-13-8P, Silicon vttrium carbide nitride (Si4Y2CN6)
  - RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (doped with rare earth ions; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
    - 903905-89-5P, Cerium silicon yttrium carbide nitride (Ce0.06Si4Y1.94CN6)
  - 903905-90-8P, Silicon terbium yttrium carbide nitride (Si4Tb0.3Y1.7CN6) 903905-91-9P, Cerium silicon yttrium carbide nitride (Ce0.02Si4Y1.98CN6) 903905-92-0P, Cerium silicon vttrium carbide nitride (Ce0.04Si4Y1.96CN6) 903905-93-1P, Cerium silicon yttrium carbide nitride (Ce0.08Si4Y1.92CN6) RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
    - (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
  - 1314-36-9, Yttrium oxide, reactions 7440-44-0, Carbon, reactions 7727-37-9, Nitrogen, reactions 12033-89-5, Silicon nitride, reactions RL: RCT (Reactant); RACT (Reactant or reagent)

- (prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- 7440-27-9, Terbium, properties 7440-45-1, Cerium, properties 18923-26-7, Cerium(3+), properties 22541-20-4, Terbium(3+), properties RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses) (yttrium carbide nitride silicide doped with; prepn., structure, and luminescence properties of Y2Si4N6C:Ce3+ and Y2Si4N6C:Tb3+)
- RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
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- (2) Ekstrom, T; J Mater Chem 1997, V7, P505 CAPLUS
- (3) Hintzen, H; EP 1104799 2001 CAPLUS
- (4) Hirosaki, N; WO 2005078811 2001 CAPLUS
- (5) Hoppe, H; J Mater Chem 2001, V11, P3300
- (6) Lammers, M; J Electrochem Soc 1987, V134, P2068 CAPLUS
- (7) Lee, J; J Am Ceram Soc 1979, V58, P869 CAPLUS (8) Li, Y; J Solid State Chem 2004, V177, P4687 CAPLUS
- (9) Liddell, K; J Eur Ceram Soc 2005, V25, P37 CAPLUS
- (10) Schmidt, P; WO 2005083037 A1 2005 CAPLUS
- (11) Thompson, D; Mater Sci Res 1986, V20, P79 CAPLUS (12) van Krevel, J; J Alloys Compd 1998, V268, P272 CAPLUS
- (13) van Krevel, J; J Solid State Chem 2002, V165, P19 CAPLUS
- (14) Wiles, D; J Appl Crystallogr 1981, V14, P149 CAPLUS
- (15) Wiles, D; J Appl Crystallogr 1982, V15, P430